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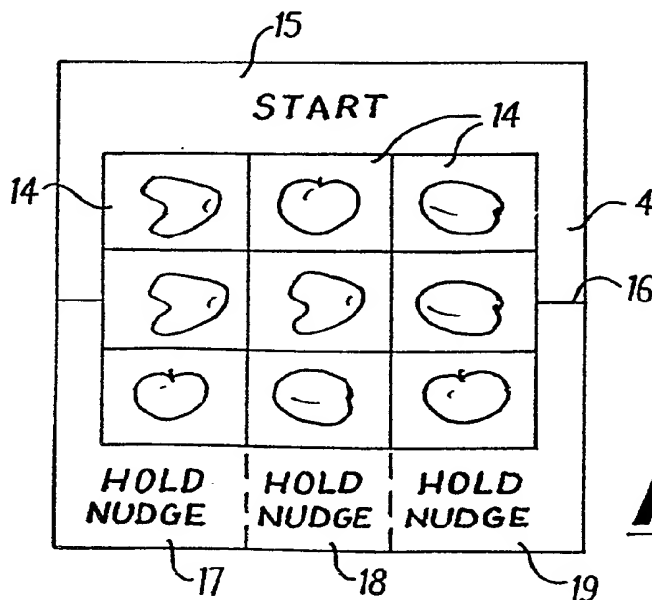
(52) UK CL (Edition K)  
**G4V VAA V118**

(56) Documents cited  
**GB 2235325 A GB 2232087 A GB 2126388 A  
 GB 1311713 A GB 1160702 A**

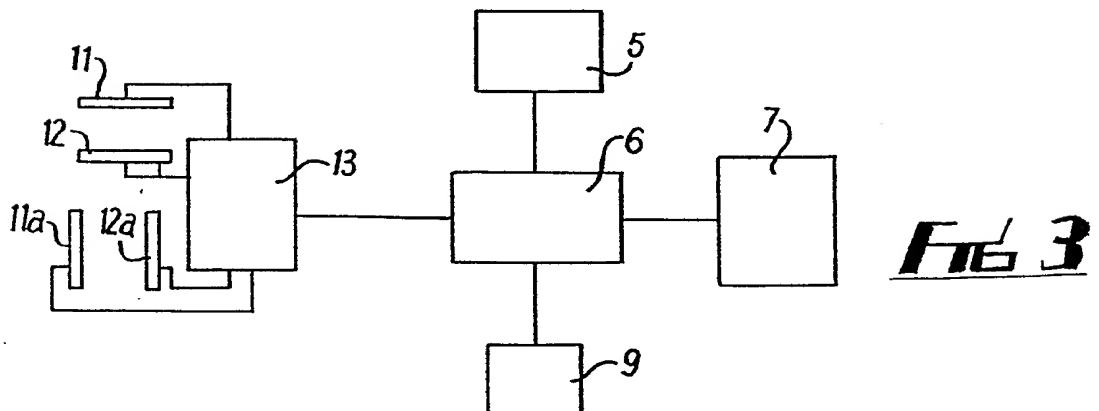
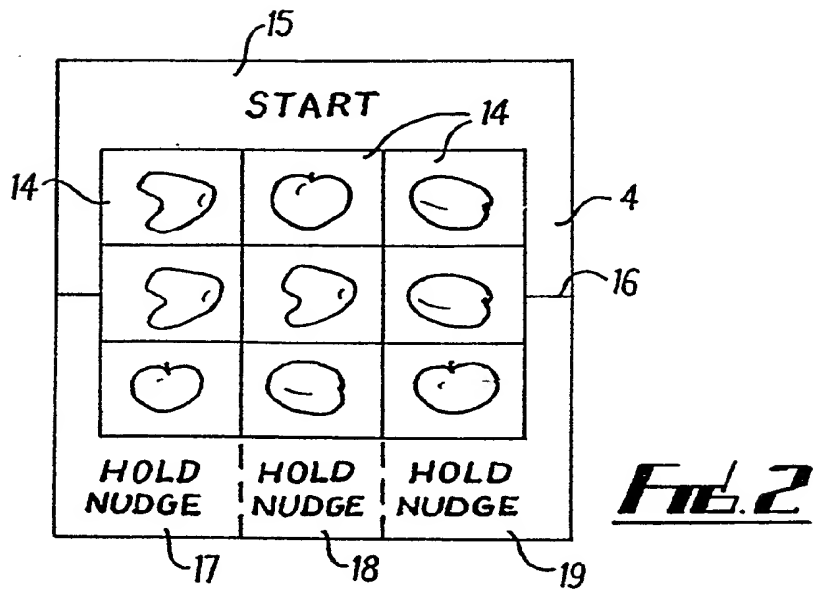
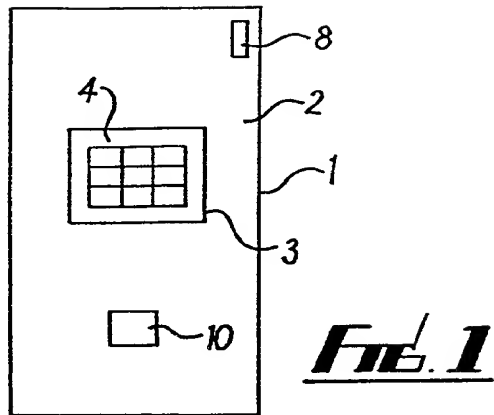
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(54) **Entertainment machines**

(57) In a coin-operated entertainment machine eg. a fruit machine having real or simulated rotatable reels (14) carrying symbols and player operable controls to rotate the reels (14) and then bring them to rest with a combination of symbols displayed on or through a screen or window (4), the player operable controls are touch controls (11-13) of a touch screen. The touch screen may be the same screen or window (4) providing the symbol display. Alternatively the touch screen may be an auxiliary display screen.



**FIG. 2**



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ENTERTAINMENT MACHINES

This invention relates to a coin-operated entertainment machine of the kind which is operable to play games resulting in the selection and display of combinations of symbols and with which a win indication is given in the event  
5 that a symbol combination of a predetermined winning nature is obtained. The invention is more particularly, although not exclusively, concerned with such a machine which is a fruit machine and with which the displayed symbols (typically representations of fruit) are selected at random, for example, by rotation of reels or by change of a video display simulating the rotation of  
10 reels. The term coin is used herein for the sake of convenience and is intended to encompass tokens, credit cards, notes and any other suitable value-representing elements.

Known fruit machines have user operable press buttons by means of which various machine operations can be initiated and controlled by the player.  
15 Commonly there is a main 'start' button, and also reel-control buttons located respectively under the different reels to control 'hold' and 'nudge' functions and auxiliary buttons for other functions such as 'gamble' 'pay out' and the like.

The trend is for such known machines to be increasingly varied or complex with regard to the control functions made available during the course of a  
20 game whereby the player may have problems in responding promptly to the need (or opportunity) to press a button: The player, especially if he is inexperienced, may find it difficult quickly to identify and locate the requisite button.

Also the provision of multiple press buttons is inconvenient from a  
25 manufacturing point of view in so far as this adds to manufacturing cost, introduces a possible source of operational unreliability and imposes limitations

on the design of the exterior of the machine.

An object of the present invention is to provide a machine of the kind described incorporating convenient controls with which control functions can be initiated by a player quickly and easily.

5 According to the invention therefore there is provided a coin-operated entertainment machine of the kind described having player-operable controls, characterised in that at least some of said controls comprise touch-screen controls.

10 By touch-screen is meant a screen with associated electronic equipment which produces control signals in response to movement of a person's finger into contact with or close proximity to locations on the screen.

With this arrangement, instead of having to identify and locate a press-button, the player need only find the requisite location on the screen, and this can be facilitated by the presence of directions on the screen and/or by  
15 the juxtaposition of the location to a feature to be controlled, or otherwise. Control functions can therefore be initiated quickly and easily even by an inexperienced player.

Moreover, since press buttons are not needed, or at least can be reduced in number, manufacture can be much facilitated.

20 Most preferably, the touch screen comprises a screen or window on or through which the symbols are displayed. It is however also possible to use a separate screen or window providing an auxiliary display.

The screen location of the touch-screen may be touch sensitive or pressure sensitive or proximity sensitive. Thus the associated electronic  
25 equipment may comprise radiation beams (e.g. infra-red) between emitters and sensors in front of the screen, whereby one or more such beams is interrupted

by the operator's finger; or a transparent resistive or capacitive sheet in front of the screen whereby there is a change in resistance or capacitance when the operator's finger contacts or applies pressure to or is moved in close proximity to the sheet. Other modes of operation may also be possible.

5       The screen may be a video screen (whether crt or lcd), or may be a window. Thus, for example the screen may be a video screen providing a display of simulated rotating reels, or the screen may be a window through which actual rotating reels can be seen.

10       The touch-sensitive controls may be used for any or all of the machine operations. Thus in the context of a fruit machine the touch sensitive controls may be used for any or all of: 'start', 'nudge', 'hold', 'gamble', 'pay-out' and the like.

The invention will now be described further by way of example only and with reference to the accompanying drawings in which:-

15   Fig. 1       is a diagrammatic representation of the front of one form of a fruit machine according to the invention;

Fig. 2       is a diagrammatic view to a larger scale of a screen of the machine in play; and

Fig. 3       is a block circuit diagram of the machine.

20       The fruit machine comprises a floor-standing box-structure 1 having a front wall 2 with a central cut-out region 3 through which is exposed the screen 4 of a crt visual display unit 5.

Within the box structure the vdu 5 is connected to microprocessor-based control equipment 6. The control equipment is also connected to a  
25   coin-mechanism 7 which receives coins from a coin slot 8, and a payout mechanism 9 which discharges to a pay-out aperture 10.

The screen 4 of the VDU 5 is of the touch screen kind and has in front of its surface two sets of infra-red beams which run between emitters 11, 11a and sensors 12, 12a at opposite edges of the screen. The beams are parallel to the screen surface and the beams of each set are parallel to each other and perpendicular to the beams of the other set. The emitters and sensors are connected to electronic circuitry 13 which monitors the integrity of the beams. If a person touches the screen with a finger, the finger breaks a combination of mutually perpendicular (x, y) beams whereby the location of the person's finger relative to the screen is computed by the electronic circuitry 13 and the control equipment 6.

In use, the control equipment 6 in the machine generates a display on the VDU screen 4 simulating three or four rotatable reels 14 having peripheries marked with equally spaced symbols (e.g. 20 fruit). The machine is actuated ready for play by insertion of the requisite value of coin or coins into the coin mechanism 7 via the coin slot 8.

The player is then invited to start the game by touching an area of the screen. This invitation may be effected by appearance of instructions on the screen, e.g. at location 15 shown in Fig. 2.

The reels 14 then rotate (in simulation) and come to rest with a combination of symbols displayed on a central, horizontal win line 16. The player may then have the opportunity of improving this combination by stepping one or more reels 14 through one or more positions (i.e. a 'nudge' function) or he may have the opportunity of holding one or more reels against rotation in a next game (i.e. a 'hold' function). Actuation of a 'nudge' or 'hold' function may be effected by the player touching the screen beneath one or more of the reel displays (or in some other related position) e.g. at locations 17, 18, 19

shown in Fig. 2.

Similarly, by touching appropriate regions of the screen 4 the player can activate other functions such as 'gamble' 'payout' etc. These regions may be different from the region 17, 18, 19, or may be the same regions with  
5 appropriately changed screen instructions.

In this way, it will be appreciated that the player can respond quickly and conveniently to an invitation or opportunity to operate a control in so far as the location of the control can be prominently before his eyes at the time when operation is to be effected. It is feasible for the control location to be at or  
10 adjacent the location at which the operation invitation is displayed and/or the location at which the reel or other game feature is displayed.

Moreover, with the arrangement described, manufacture can be much facilitated. Multiple press buttons which can be expensive and time-consuming to install are not needed. This reduces costs and also enables the front wall of  
15 the machine to be designed without limitations imposed by the requirement to site the press buttons. Further, since the touch screen does not rely on moving, projecting parts, operational reliability and security against inadvertent or deliberate damage can be much enhanced.

It is of course to be understood that the invention is not intended to be  
20 restricted to the details of the above embodiment which are described by way of example only.

Thus, for example, the touch screen need not be of the x, y infra red beam kind but may be of any other suitable construction and mode of operation. Further, although the touch screen is shown as being the same  
25 screen as that which produces the reel display it is to be understood that this is not essential. If desired the touch screen may be separate from the reel

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display and the reel display may use actual reels displayed through a window rather than simulated reels. Also, the machine need not be of the rotatable-reel fruit kind, but may be of any other suitable nature.

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CLAIMS

1. A coin operated entertainment machine of the kind which is operable to play games resulting in the selection and display of combinations of symbols and with which a win indication is given in the event that a symbol combination  
5 of a predetermined winning nature is obtained, said machine having player-operable controls characterised in that at least some of said controls comprise touch-screen controls.
2. A machine according to claim 1 characterised in that the touch screen comprises a screen or window on or through which the symbols are displayed.
- 10 3. A machine according to claim 1 characterised in that the touch screen is a screen or window which provides an auxiliary display separate to a screen or window on or through which the symbols are displayed.
4. A machine according to any one of claims 1 to 3 characterised in that the touch screen has associated electronic equipment comprising radiation beams  
15 between emitters and sensors in front of the screen.
5. A machine according to any one of claims 1 to 4 characterised in that the touch screen is a video screen.
6. A machine according to claim 5 when dependent on claim 2 characterised in that the video screen provides a display of simulated rotating reels with said  
20 symbols thereon.
7. A machine according to any one of claims 1 to 6 which is of the fruit machine kind characterised in that the touch controls are used for any or all of start, nudge, hold, gamble and payout functions.
8. A machine substantially as hereinbefore described with reference to and  
25 as illustrated in the accompanying drawings.

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**Patents Act 1977**  
**Examiner's report to the Comptroller under**  
**Section 17 (The Search Report)**

Application number

9021898.3

**Relevant Technical fields**

(i) UK Cl (Edition K ) G4V (VAA VJJ) G1N

(ii) Int Cl (Edition 5 ) G07F 17/34

Search Examiner

G NICHOLLS

**Databases (see over)**

(i) UK Patent Office

(ii)  
 ONLINE DATABASE: WPI

Date of Search

4 MARCH 1992

Documents considered relevant following a search in respect of claims

1 TO 8

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2235325 A (ORDONEZ) Whole document	1,3
X	GB 2232087 A (ITKIS) See particularly page 7 lines 25-35	1,2,5
X	GB 2126388 A (RCA) Whole document especially opening paragraphs	1,2
X	GB 1311713 (SANDERS) See particularly page 1 lines 11-52	1,2,5
X	GB 1160702 (BEHAVIOURAL RESEARCH) See particularly page 1 lines 33-50	1,2

Category	Identity of document and relevant passages	Relevant to claim(s)

### Categories of documents

**X:** Document indicating lack of novelty or of inventive step.

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**E:** Patent document published on or after, but with priority date earlier than, the filing date of the present application.

**&:** Member of the same patent family, corresponding document.

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